

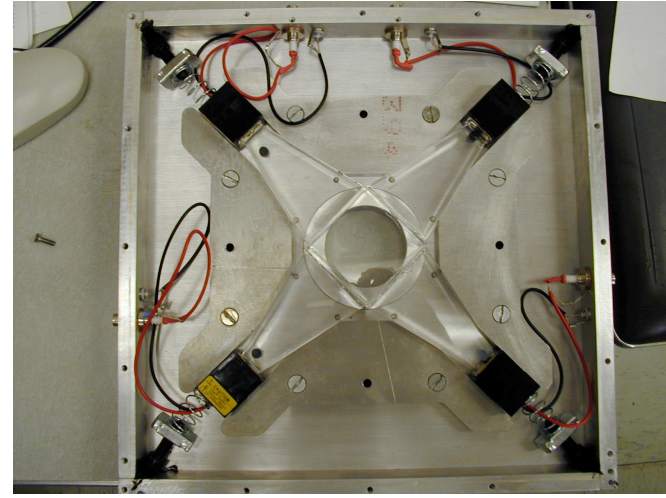
# Time of Flight Status

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1. T0 Counters
2. TOF Wall
3. Software
4. Known Issues

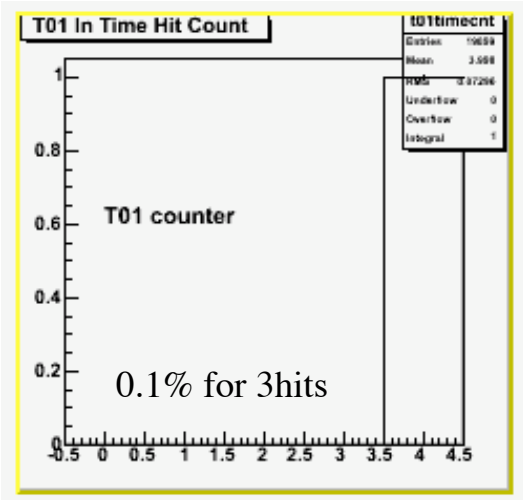
# T0 Counters

- T00 installed
  - Has one problem tube
  - Not getting good timing
- T01
  - Time Resolution depends upon the trigger timing.
- T0C (Cerenkov) / TBD
  - Didn't function in our beam
  - Is now TBD (Trigger Beam Definition) counter using scintillator.
  - In Place. Need to look at ringing.
  - Timing Usage unknown due to conflicts with the trigger.

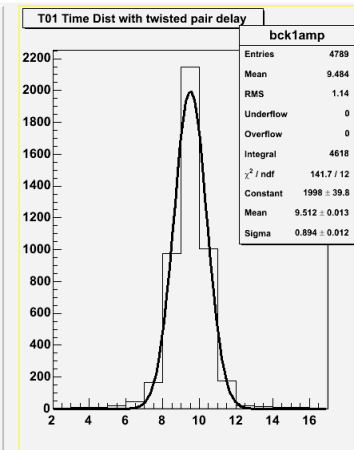
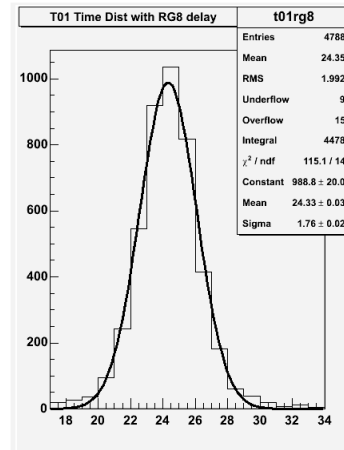


T00/T01 counters  
6cm x 6cm x 1cm  
Scintillator

# T0 Counter Performance



95%



The efficiencies for the T01 counter is very good at -800V  
 99.9% of hits have all four PMTs.  
 Three hits required by the trigger.

T01 resolutions have preliminary measurements.

# T0 Time Resolutions

T01 Resolutions shown on table for a few cases. Those in blue are with beam, those in green are from S. C. tests. They vary from run to run  $\pm 3\text{ps}$

T01 Resolutions			
Thresholds:	15mV	25mV	50mV
Delay Length			
35 feet	50ps		
50feet		55ps	60ps
100feet	70ps		
140feet (250ns)		80ps	85ps
250ns of RG8		70ps	75ps

The Longer trigger time requires more delay and worse resolution  
**We care about timing in the trigger.**

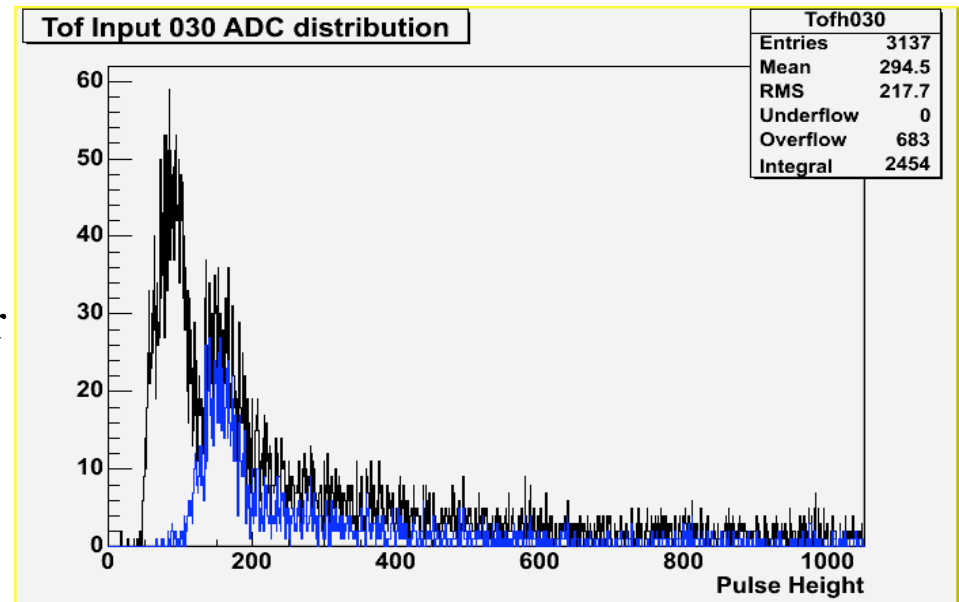
# Time of Flight Wall

- 40 Small bars Installed
- 14 Large bars Installed
- 2 Calibration Bars Installed



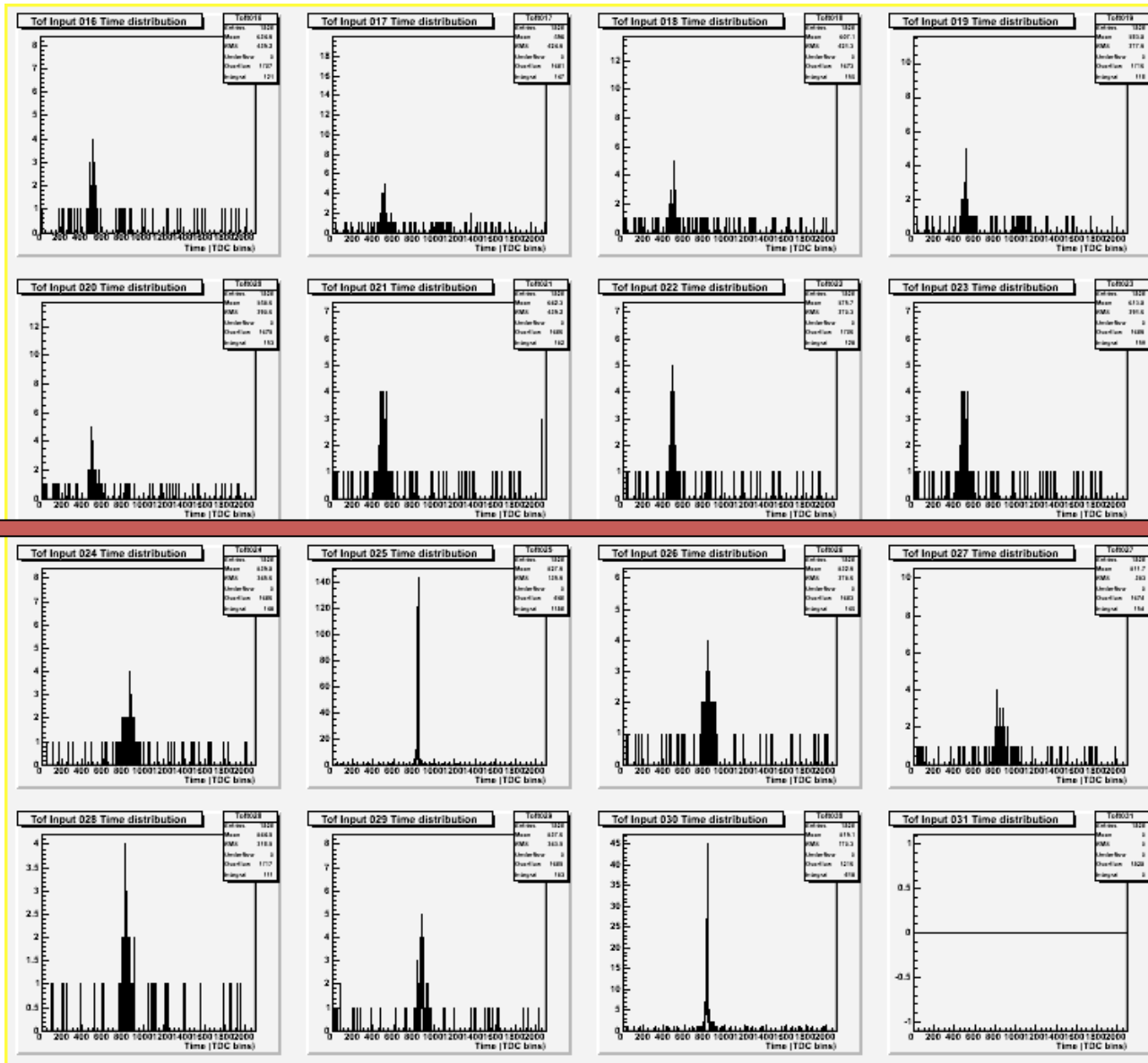
# Time of Flight Wall

- We see ADC pulses which are above pedestal.
  - All ADC channels are connected
  - No extra delay available for longer trigger times
- 32 TDC channels connected with extra long delay.
  - These peak 132ns after trigger arrives with 360ns of ECL delay cable
- The rest of the TDCs will be connected when the trigger time is fixed.



Typical TOF wall ADC distribution:  
Black is all events  
Blue is only those event with a TDC hit.

# The 15 TDCs with long delays: Hits are 132ns after trigger



Peaks are at  
530 counts  
(250ps / count)

Peaks are at  
875 counts  
(150ps/count)

# Time of Flight Software

## Online:

- MippIo block finalized
- Raw2root done
- T0s in separate block from TOF
- Onmon working for T0 counters (K. Wu)
- TOF onmon coming

## Offline:

- Connection map done with text files
- Working on getting it into the database.
- Reconstruction and Calibration need tracking to be effective.
  - Not done
- T0 timing resolution not yet done as a Reco job.

# Known Issues

- Time Resolution depends on a fast trigger.
- Need finalized trigger time to get all of the TOF Wall TDCs into readout
- TBD seems to have termination problem
- Database Connection Map coming
- Reco package and online monitoring work ongoing.